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coal

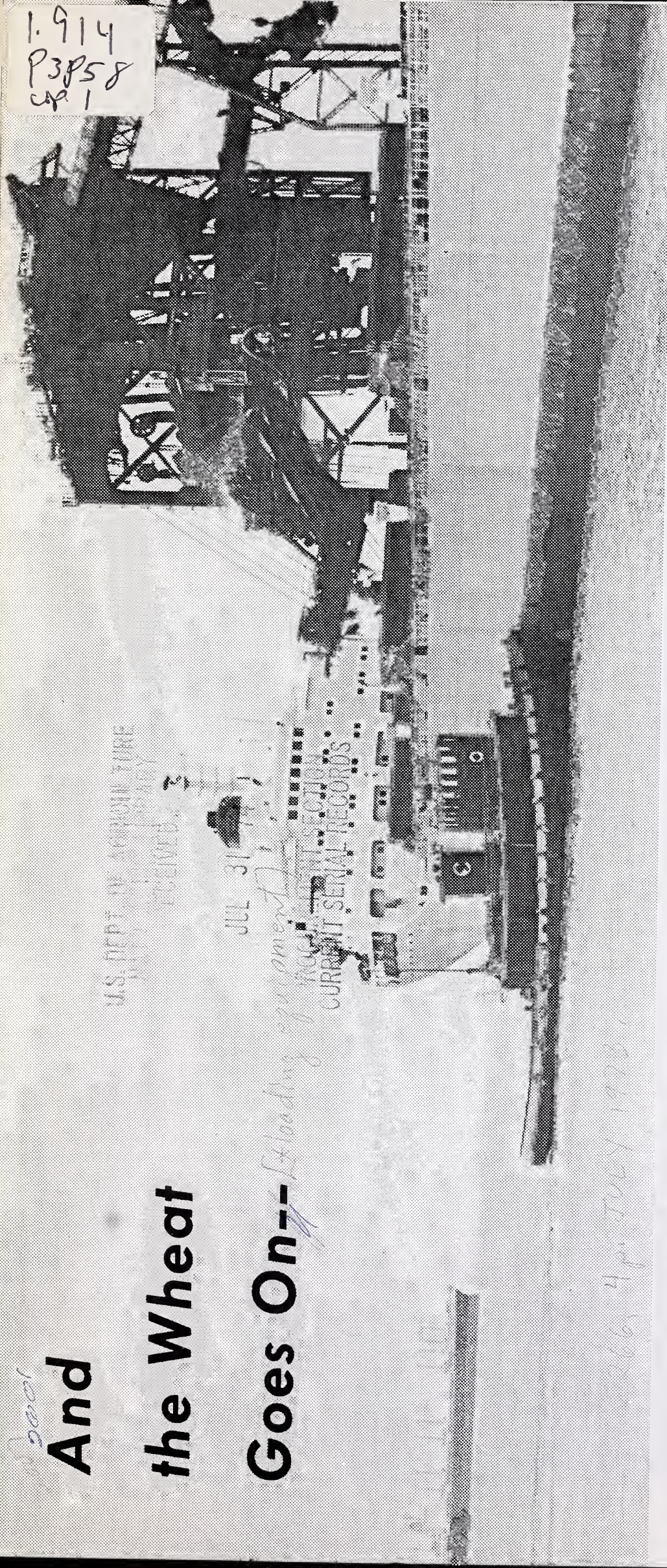
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And the Wheat Goes On--

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Unloading equipment

266, 4 p. JULY 1973

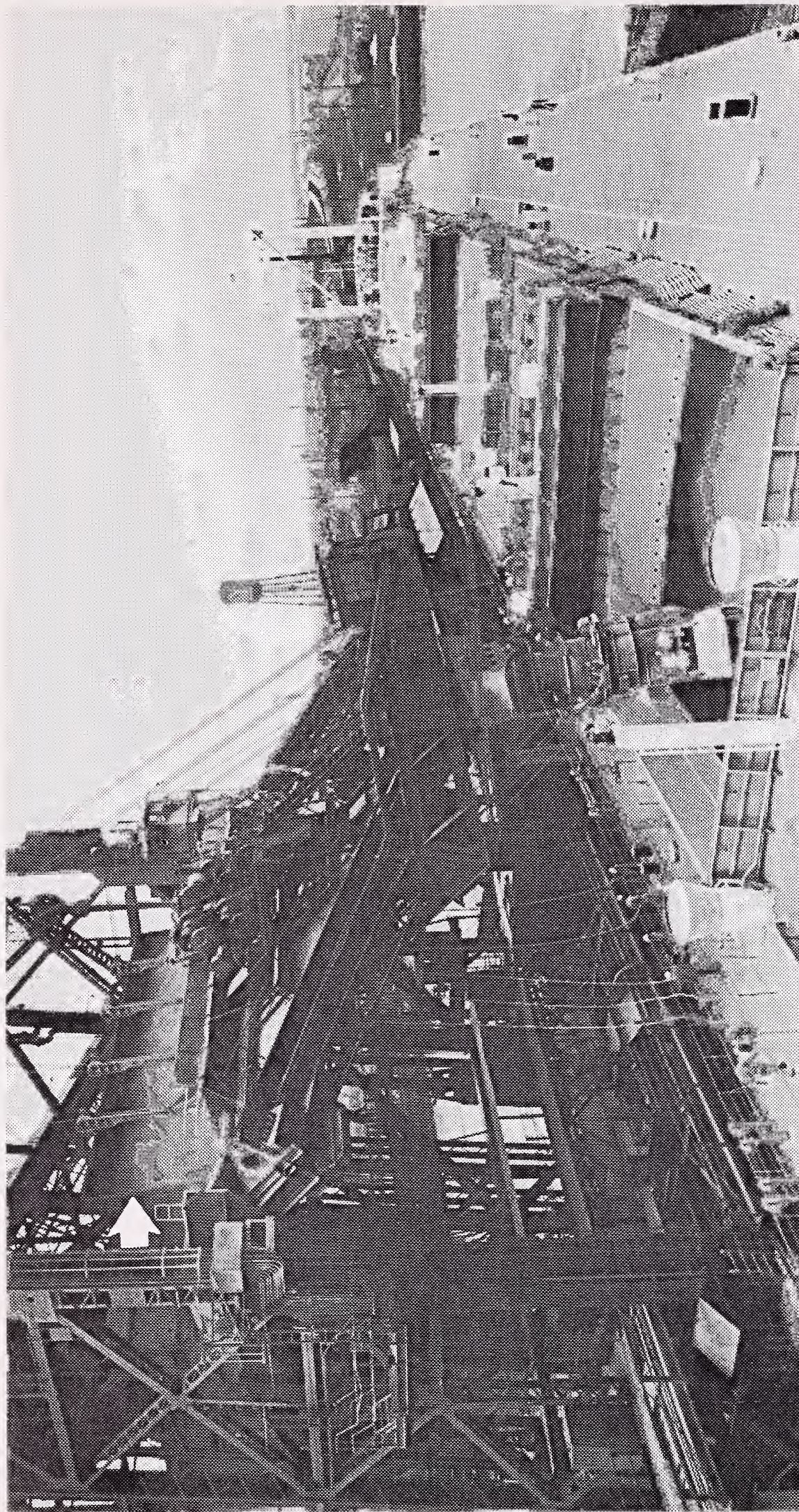


A tugboat holds a cargo ship in position at a coal loading dock in Newport News, Va., as the ship is filled with wheat. 0473B397-15

“Yankee” ingenuity came to the rescue at Newport News, Va., to bypass a bottleneck of getting export grain shipments on their way overseas.
The innovation involves the use of coal handling facilities to transport and load grain into waiting ships. It's a new way to meet deadlines on grain exports—exports that help improve our balance of trade and our international relations.

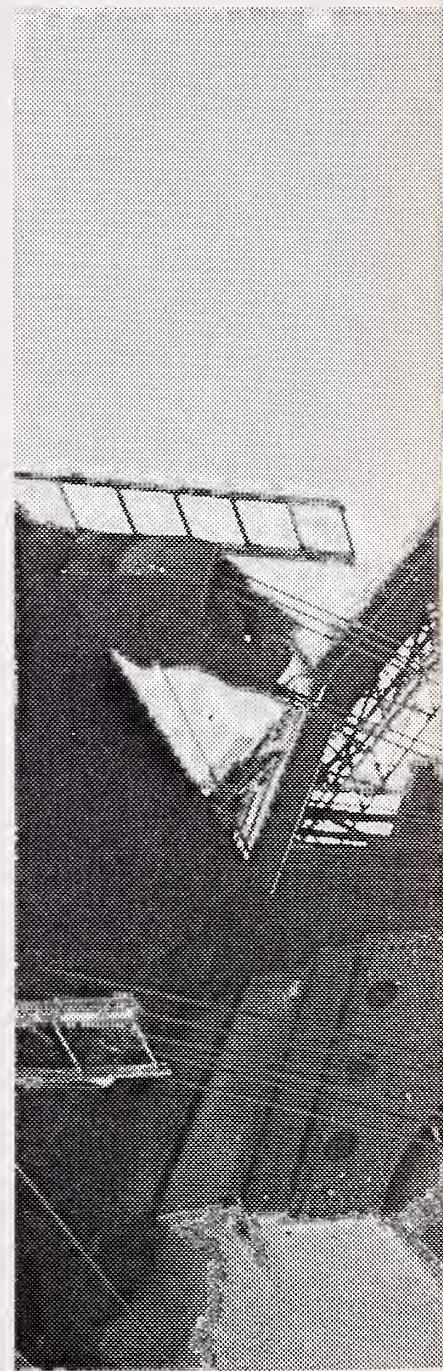
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AT THE NEWPORT NEWS port, grain elevators were overloaded, but the grain had to be moved. So a 40-year-old coal loading facility was converted to accommodate wheat. At the dock, the wheat is handled in the same manner as coal. A grain elevator is not needed and two ships can be loaded at the same time. Also, the coal loading facility is fast and can operate 24 hours a day. Unlike conventional grain elevators, the coal dock can load grain into a ship as fast as it can unload the rail cars. Using this coal dock for wheat is proving so efficient that consideration is being given to using similar facilities at other ports to keep the grain moving.

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Before the coal dock was used for wheat, however, the U.S. Department of Agriculture was called in to check the operation—because the U.S. Grain Standards Act requires that all grain shipped in export by grade must be officially inspected for quality. So USDA experts went to Newport News to be sure that the wheat would not be contaminated and that proper sampling devices were installed to obtain representative samples for official inspection. Official grain inspectors, licensed and supervised by USDA, are available during the loading of the rail cars in the Midwest and during the unloading at Newport News.

After USDA gave the loading facility the go ahead, empty ships from many countries began arriving at Newport News and so did trainloads of wheat from the Midwest.

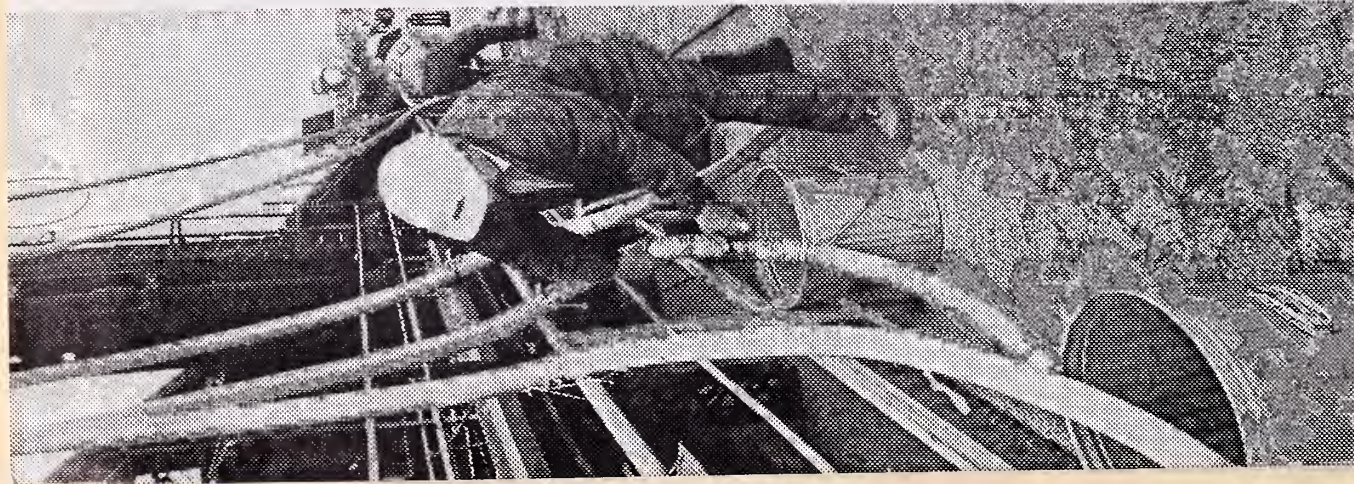
When a trainload of wheat arrives at the coal loading facility, cars are moved to either the right or left side of the loading dock and weighed. The left side is equipped with an elevator to lift the rail cars and the right with a covered conveyor belt.

On the left side, each car is moved to the elevator, lifted about 60 feet into the air, and turned on its side. As the car tips, the wheat flows into a large spout which directs the wheat into the cavernous hold of the waiting ship. In about three minutes, the car is rolling back to the railroad yard, empty. If both sides are operating at the same time, the facility can unload 40 cars per hour and can handle a million bushels in less than 24 hours. This means that two ships of million-bushel-capacity can be loaded in about two days.

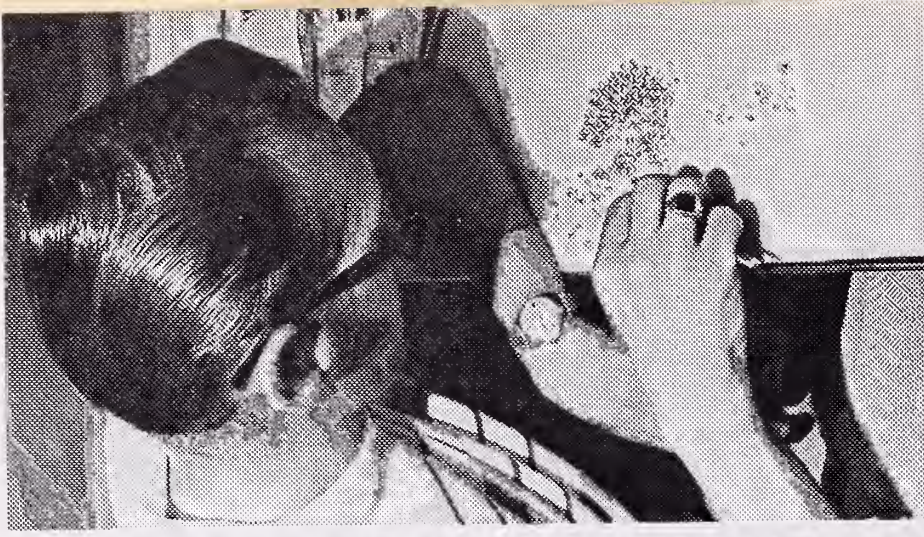
For the official inspection, samples are collected from each rail car, and the samples from 15 consecutive cars are combined into one subplot sample. Then, in a laboratory set up at the dock, the official inspectors test these samples to determine the wheat's condition, class, and finally its U.S. grade. The grade gives the buyer or seller of the wheat a good indication of the wheat's value.

After each subplot sample has been thoroughly examined, the inspectors assign the entire shipment a final grade and issue an official certificate. Then, and only then—when the quality of the wheat has been officially certified—will the ship depart for foreign shores.

Wheat plunges from a railroad car (arrow, top photo) tipped on its side through a huge funnel into the cavernous hold of a ship (bottom photo). In about three minutes the empty car will be on its way back to the railroad yard. 0473B398-23; 0473B398-9



Grain samples are collected from each car and sent to lab Where federally-licensed inspectors provide official grade



Hoses (left) divert representative samples of wheat from each car for the official inspection (0473B398-1). The samples are placed, by official samplers, in special bags—each identified by the time the sample was taken and by the rail cars that the samples came from—before they are taken to the grading lab. There, USDA-licensed inspectors, employees of the Virginia Division of Markets, determine the wheat's test weight per bushel (0473B395-25) and its moisture content (0473B394-6). Other tests include determining the percentage of dockage (non-wheat materials such as other grains, dirt and straw) and broken and shrunken kernels. The last step is to pick out by hand (right) foreign material and kernels damaged by insects, moisture, heat, or cold, to obtain the percentage of total defects (0473B393-31). The inspectors also determine the class of wheat—hard red winter wheat, hard red spring wheat, etc. The class tells which use the wheat is best suited for; different classes are used for bread flour as opposed to macaroni and other pasta products, for example. The test results are recorded for each subplot sample. Then the results are combined to provide an official grade for the entire shipment.